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# OCCUPATIONAL OUTLOOK

*by* DAVID I. VERWAY, *Research Professor, Division of Research, Graduate School of Business Administration, Michigan State University*

According to the new special supplement to *Occupations in Demand at Job Service Offices*, a publication of the U. S. Employment Service of the Department of Labor, there were four electronics engineering jobs available in the aerospace industry in Michigan during August. The jobs were located in Grand Rapids, Lansing, and Saginaw. Four tool designers (aerospace) were sought by employers in Detroit, one in Kalamazoo. Aerospace positions also were open for a cost-analysis engineer, an electronic design engineer, an electrical design engineer, and an electrical test engineer, all in Detroit.

Nonaerospace openings in the Detroit area included jobs as cash clerks, insurance salesmen, commercial cleaners, security guards, cannery workers, construction workers, and building maintenance repairers. No other openings were listed for the Wolverine State.

Other evidence of slim pickings this year for Michigan youth is found in *Quarterly Job Openings Report*, published by the Michigan Employment Security Commission. Most blue-collar factory, construction labor, and other entry level occupations for the unskilled are listed as surplus. Shortage occupations include nurse, physician, medical laboratory technician, clinical psychologist, and several categories outside medicine for which long training also is required (see Table 1). The poor market for young unskilled workers and favorable prospects for those with college degrees are responsible for enrollment in Michigan colleges being higher than expected this year. The college bound should be selective, however. Teaching, pharmacy, law, writing, and various managerial specialties are experiencing labor surpluses.

## SHORT-TERM OUTLOOK

Manufacturing employment in this state is not expected to recover to the 1978 level until 1983. Construction employment could recover during 1982, depending on interest rates and the availability of money. At the other extreme, service industries have not stopped growing, although there has been some slowdown in the rate of gain.

For those seeking high paying jobs in construction and manufacturing, there will be too few openings this year and next to satisfy those already unemployed, let alone meet the needs of those new in the labor force. It may seem paradoxical that jobs will be plentiful in retail trade and the lodgings industry. These sectors depend on the general level of income, which will improve substantially here (despite slow growth in manufacturing employment) because of rapidly rising paychecks. Typically, factories increase overtime work more rapidly than employment during the early stages of economic recovery.

The weak condition of the state treasury is projected to last for several quarters; among other reasons, the 1978 Headley Amendment to the Michigan Constitution precludes a significant increase in revenue. The tight budget translates into layoffs in state and local government, including higher education. The effect will be most pronounced on clerical and secretarial occupations. Nonetheless, there should be plentiful opportunities for men and women with these skills, particularly in southeastern Michigan and the Grand Rapids, Kalamazoo, and Traverse City areas.

*The MEDIC Program, by Wayne L. Workman / page 3*

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Comprehensive analysis of the outlook for Michigan college graduates is impossible because separate occupational data are not available for each level of educational accomplishment. College placement officers are in a position to gauge the market in a general way. The latest Michigan State University Placement Services Annual Report, for example, had these comments about the latest academic year:

> The number of graduates in the College of Agriculture and Natural Resources was up from 1978–79, but employer interviewing requests declined somewhat. Packaging remains highest in demand, with Food Systems Economics and Management second, and Crop and Soil Science third. Job listings for agriculture and natural resources alumni remained about the same as last year.
>
> Campus interviewing opportunities for College of Arts and Letters students were up 3 percent from 1978–79. The number of schedules was higher at the Master's and Doctoral level, and lower at the Bachelor's. Of job vacancies posted at Placement, the largest number of requests were for Art, Music, and English.
>
> The demand for MBA's from the College of Business climbed 5 percent, yet employer requests for B.A.'s dropped 13 percent from last year. The increase in demand for MBA's was most apparent for Financial Administration. At the Bachelor's level, no single major took all the drop. Accounting is most attractive to employers. The Alumni System showed a slight decline in business listings.
>
> Graduates from the College of Communication Arts and Sciences had approximately the same number of opportunities to interview on campus as last year. The total, however, remains low as employers in this area tend to hire graduates on a mail-in and walk-in basis. Advertising was the most frequently requested degree at both Bachelor's and Master's levels. Requests for Bachelor's and Master's in Journalism more than doubled. Journalism was also the college's most frequently designated degree through the alumni job listing service.
>
> The supply of new teachers in Michigan is falling faster than the demand for College of Education graduates, although the job market for teachers this year will be temporarily softened by current economic conditions. Certain fields are demanded such as math, science, vocational education, industrial arts and special education. Other majors are oversupplied such as elementary education, social sciences and foreign languages. Regardless of new teacher availability, rural and inner city school districts often find it difficult to obtain teachers. School districts can no longer be as selective when hiring teacher candidates since only 6,400 new teachers were available for 3,427 positions filled by new teachers in 1979–80 (1.5 to 1). This compares to 23,000 new teachers available in 1969–70 for 7,700 vacancies in 1970–71 (3 to 1).
>
> 1979–80 seemed to bring a deepening of recession for many Ph.D. candidates seeking academic positions. Listings declined, hiring slowed, temporary non-tenure positions became more common. Employers became more demanding and specific in their requirements. However, most business areas were in high demand; candidates in special education were able to be selective. Nursing, some agricultural areas, and Human Ecology were also high demand areas.
>
> In the school administration division, there were about the same number of job listings as before. The greatest change was in the decreasing number of candidates.
>
> It was a very good year for graduates of the College of Engineering. B.S. mechanical engineers continued to have the largest number of interview requests from employers for the entire University. Electrical Engineering and Computer Science followed. Alumni vacancies listed for engineers rose slightly. Chemical engineers received the highest salary offers, followed by electrical engineers. Computer science starting salaries rose the most.
>
> The number of campus interview possibilities at the Master's level for the College of Human Ecology showed a very good increase over 1978–79. Total requests for Bachelor's degrees improved slightly. Moreover, both numbers have risen significantly since five years ago. Retailing, in the highest demand in the college at both degree levels, improved but slightly for undergraduates, but showed a good increase at the graduate level. The most dramatic increase, however, came at both levels, particularly Master's, for Clothing and Textiles. A slightly smaller number of alumni job vacancies occurred in 1979–80.
>
> Employer requests for James Madison College majors improved this year. However, limited interviewing opportunities and minimal job listings continue to be a frustration to Madison students as well as other liberal arts majors.
>
> Graduates of the College of Natural Science and Lyman Briggs found demand about the same as last year as measured by the number of campus interviewing schedules. Chemistry majors had the largest number of requests, followed by Mathematics. There was a good demand for Physics majors. The alumni vacancy service had 6 percent fewer listings for this college.
>
> Jobs remain plentiful in the medical and health services fields although the employment situation is changing slowly. Supply and demand are coming closer together. Shortages of physicians continue to exist, but one federal study concludes that a surplus may exist by 1990. There is a problem of specialty maldistribution and geographic balance. A better overall balance of supply and demand exists for veterinarians in private practice, but some shortages exist in the educational area. Industrial demand is not being fully met.
>
> Interviewing schedules for graduate students in the College of Social Science increased; those for undergraduates remained the same. Requests for the Bachelor's Multidisciplinary Program rose, however. Demand for Master's of Labor and Industrial Relations continued to increase. Alumni job listings were the highest for Mental Health, Urban Planning, Psychology and Master's in Social Work.
>
> With a limited number of graduates, the College of Urban Development finds its students must seek employment through sources other than Placement Services. Eighty-four percent of the 1978–79 class was placed within six months of graduation.

Discussions with and reports from several other placement

*(Continued on page 5)*

# THE MEDIC PROGRAM

*by* WAYNE L. WORKMAN, *Director, Office of Economic Development, Michigan Department of Commerce*

Communities throughout the state vary considerably in the availability and cost of such business location factors as land, buildings, transportation, energy, labor, and wastewater treatment. They have limited control over most of these, but within these limits may rest the particular combination that a business wants. Some communities in Michigan have compiled impressive records in successfully locating and expanding industry within their boundaries, while others have had little or no success.

In many cases, the differences in success are attributable not only to cheaper resources but also to a superior job of preparing a realistic strategy for economic action based on available resources, organizing economic development efforts, and making an effective presentation to prospective business. The fundamental feature exhibited in successful communities is the cooperation of public and private sectors and a recognition of the value of organized community action in avoiding needless costs, unnecessary delays, conflicting activities, and duplication of effort.

### THE MEDIC PRINCIPLE

The Michigan Economic Development Incentive Concept (MEDIC) is a state assistance program administered by the Office of Economic Development (OED), Michigan Department of Commerce, to promote local economic development. It was established to carry out state and local economic development goals and strategies by helping communities improve their ability to develop and implement economic development programs.

The primary role of the state in the MEDIC program is to function as a catalyst to encourage the creation of umbrella organizations, generally at the county level, that can unify and strengthen existing development efforts or establish a comprehensive economic development structure where none previously existed. The umbrella organization for a community should serve as the lead organization and be responsible for implementing the development program. To that end, the state will provide financial, technical, and management assistance, as well as program coordination for those communities that apply for participation and are designated as MEDIC communities.

Since the initiation of the MEDIC program in 1976 with the funding of local economic development organizations in Chippewa County, Genesee County, and Detroit, the program has been expanded to include fifteen additional organizations.

The program is flexible in the type and nature of assistance provided to communities. In addition to funding economic development organizations directly, the program will fund technical assistance projects that will support or reinforce economic development efforts. For example, a grant was made to the Institute of Science and Technology at the University of Michigan to conduct a series of economic development practitioner training programs. Because of new state and federal economic development programs, the demand for trained practitioners exceeds the supply. Training of persons entering the economic development field in the skills and knowledge required of full-time practitioners will increase the effectiveness of local economic development organizations.

### NEW JOB IMPACT

The existence of substantial and persistent unemployment in Michigan is due to both structural and cyclical factors and is not limited to a few communities in the state. The problem is one that affects virtually every one of Michigan's eighty-three counties, each having particular economic problems and opportunities.

The overall goal of the MEDIC program is to create permanent base industry job opportunities in the state. At the time the MEDIC program was designed it was anticipated that the number of jobs created during the first twelve to eighteen months of an organization's operations would be minimal. It was anticipated that significant job creation would occur after this start-up period. It was further expected that there would be variation in results among communities, depending on the level of pre-MEDIC activity and on existing economic development resources.

The job creation performance of the local development organizations has met the expectations of the Office of Economic Development and confirmed previous estimates of the lead time required. The organizations that have operated programs for two years or longer are showing significant results in the creation and retention of jobs. Organizations that have been staffed for six to eighteen months are beginning to show results. The newest development groups have not developed adequate community infrastructure to recruit industrial growth. During the 1979–1980 year at least 3,158 jobs were created and retained by these organizations.

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## BRIEF

Production of Michigan apples this season is set at 900 million pounds, a 32 percent increase over last year. This would be the second largest apple harvest in Michigan this century, just 20 million pounds short of the record established in 1978.

Reversing the trend of last year, all major varieties are expected to post production increases except Northern Spies, which are expected to decline 14 percent. Last year Northern Spies were the only apple variety to increase. Leading this season's production increases is Red Delicious, up 76 million pounds over last fall to 185 million pounds this season. Jonathans remain the largest variety produced in Michigan, with a 220 million pound harvest forecast. The only other variety exceeding the 100 million pound mark is McIntosh, pegged at 150 million pounds.

At the national level, the August 1 apple crop forecast is placed at a record 8.36 billion pounds, up 3 percent from last year's record crop and 10 percent above the 1978 crop.

Delicious continues to rank as the leading apple variety and is expected to account for 37 percent of total production. Other leading varieties and their expected 1980 production are: Golden Delicious, 16 percent; McIntosh, 9 percent; Rome Beauty, 7 percent; Jonathan, 5 percent; and York Imperial, 4 percent. These six leading varieties collectively account for about 80 percent of the forecast production.

**The MICHIGAN STATE ECONOMIC RECORD**

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# Michigan Economic Indicators

| Item | Year previous of latest month | Previous month | Latest month |
|---|---|---|---|
| Manufacturing workers: | | | |
| Average weekly hours, Michigan | 40.5 | 39.6 | 39.6 (Aug.) |
| Average weekly hours, U.S. | 40.0 | 38.9 | 39.5 (Aug.) |
| Average hourly earnings, Michigan ($) | 8.66 | 9.43 | 9.34 (Aug.) |
| Average hourly earnings, U.S. ($) | 6.70 | 7.29 | 7.31 (Aug.) |
| U.S. motor vehicle production (units) | 805,186 | 395,957 | 664,371 (Sept.) |
| Michigan electricity usage (mil. kwh.) | 5,870 | 5,698 | 5,086 (May) |
| Industrial (mil. kwh.) | 2,873 | 2,453 | 2,162 (May) |
| Residential (mil. kwh.) | 1,680 | 1,806 | 1,634 (May) |
| Raw steel production: | | | |
| Michigan (000 net tons) | 942 | 437 | 452 (Aug.) |
| United States (000 net tons) | 11,309 | 6,796 | 7,019 (Aug.) |
| Consumer price index (1967 = 100) | | | |
| Detroit area | 222.2 | 253.7 | 255.1 (Aug.) |
| United States | 221.1 | 247.8 | 249.4 (Aug.) |
| U.S. wholesale price index (1967 = 100) | 238.3 | 269.8 | 273.1 (Aug.) |
| Michigan farm prices received index (1967 = 100) | 225 | 242 | 250 (Aug.) |

SOURCES: U.S. Bureau of the Census; U.S. Bureau of Labor Statistics; Michigan Crop Reporting Service; Motor Vehicle Manufacturers Association, Inc.; American Iron and Steel Institute; and Edison Electric Institute.

# Contracts for Future Building, First 8 Months: 1979 and 1980

(Thousands of Dollars)

| Area | Nonresidential | | | Residential | | | Total[a] | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1979 | 1980 | Percentage change | 1979 | 1980 | Percentage change | 1979 | 1980 | Percentage change |
| Ann Arbor | 56,097 | 74,352 | + 33 | 56,122 | 36,943 | −34 | 112,219 | 111,295 | — |
| Battle Creek | 27,792 | 15,167 | − 45 | 36,105 | 9,342 | −74 | 63,897 | 24,509 | −62 |
| Bay City | 6,506 | 15,264 | +135 | 10,855 | 14,533 | +34 | 17,361 | 29,797 | +72 |
| Detroit | 681,730 | 616,393 | − 10 | 824,379 | 364,891 | −56 | 1,506,109 | 981,284 | −35 |
| Flint | 46,991 | 57,161 | + 22 | 63,612 | 24,133 | −62 | 110,603 | 81,294 | −26 |
| Grand Rapids | 154,523 | 138,257 | − 11 | 130,037 | 100,261 | −23 | 284,560 | 238,518 | −16 |
| Jackson | 14,985 | 36,709 | +145 | 14,081 | 7,183 | −49 | 29,066 | 43,892 | +51 |
| Kalamazoo-Portage | 29,163 | 26,929 | − 8 | 49,056 | 43,152 | −12 | 78,219 | 70,081 | −10 |
| Lansing–East Lansing | 59,788 | 90,013 | + 51 | 117,748 | 57,953 | −51 | 177,536 | 147,966 | −17 |
| Muskegon–Norton Shores–Muskegon Heights | 14,671 | 8,903 | − 39 | 20,124 | 20,277 | -- | 34,795 | 29,180 | −16 |
| Saginaw | 24,572 | 26,665 | + 9 | 38,276 | 21,268 | −44 | 62,848 | 47,933 | −24 |
| Michigan | 1,289,308 | 1,193,483 | − 7 | 1,757,477 | 935,744 | −47 | 3,046,785 | 2,129,227 | −30 |
| United States | 33,731,600 | 33,681,300 | — | 52,647,100 | 38,588,300 | −27 | 86,378,700 | 72,269,600 | −16 |

SOURCE: F. W. Dodge Division of McGraw-Hill Information Systems Company, news releases.

NOTE: Battle Creek includes Barry and Calhoun counties; Detroit includes Lapeer, Livingston, Macomb, Oakland, St. Clair, and Wayne counties; Flint includes Genesee and Shiawassee counties; Grand Rapids includes Kent and Ottawa counties; Kalamazoo-Portage includes Kalamazoo and Van Buren counties; Lansing–East Lansing includes Clinton, Eaton, Ingham, and Ionia counties; and Muskegon–Norton Shores–Muskegon Heights includes Muskegon and Oceana counties.

a. Excludes nonbuilding construction contracts. This category comprises streets and highways, bridges, dams, reservoirs, river and harbor developments, sewerage and water supply systems, missile and space flight facilities, airports, utilities, and communication systems. For Michigan the 1979 and 1980 figures for nonbuilding construction contracts were $684,893,000 and $439,626,000 respectively, or a decrease of 36 percent. U. S. figures for nonbuilding construction contracts were $32,572,600,000 and $22,348,400, or a decrease of 31 percent.

## OCCUPATIONAL OUTLOOK

*(Continued from page 3)*

centers in the state indicate that MSU is typical regarding the demand for various specialties.

### EXPORTING HUMAN CAPITAL

Michigan, like other northern industrial states, has a long tradition of attracting people, particularly southerners, who aspire to blue-collar skills and the high pay of jobs in automotive plants, machine shops, and so forth. Their incomes enable them to pay for college educations for their children, many of whom must seek employment elsewhere because of the industrial structure.

This state also has a relatively high proportion of out-of-state students attracted by high quality, inexpensive education, even after paying out-of-state tuition. This phenomenon is more pronounced at the graduate than the undergraduate level.

For these reasons, Michigan is a net exporter of college trained people; that is, more college graduates leave than migrate to the state. Although Michigan data on this matter are not available, the Bureau of the Census does conduct surveys that show the migration pattern, by level of educational attainment, among regions. The 1967 study of male college graduates revealed that 31.1 percent were living in the North Central states when entering college, but only 26.3 percent were residents of that region at the time of the study. According to that survey, "the men who received their bachelor's degree in the Northeast and South were more likely to migrate to another region for their advanced degree than were men who received their bachelor's degrees in the North Central or West. The men with both bachelor's and higher degrees were more likely to have received their highest degree in the North Central Region, 34 percent, than in any of the other three regions of the nation."[1]

Recent data are not as definitive. They show that between March 1975 and March 1979 the North Central states lost 489,000 people with four or more years of college through migration to the South, Northeast, and West.[2] Meanwhile, only 288,000 individuals arrived here from other regions. The data do not reveal where these men and women received their degrees; however, the likelihood is that this region still is a substantial net exporter of college graduates. We also imported 501,000 people with high school diplomas but without college degrees, while exporting 823,000 in this category. Among those with less than a high school education, 212,000 were imported and 290,000 exported.

Sketchy data from Michigan's large universities suggest that between 25 and 30 percent of bachelor's and master's degree recipients leave Michigan. For Ph.D.'s the proportion is higher. Small institutions report that nearly all of their graduates (about 95 percent) find jobs here, but that the proportion having to leave Michigan in order to pursue chosen careers is creeping up. This situation reflects the disarray of our economy as well as prospects elsewhere, particularly in Texas and California.

### LONG-TERM OUTLOOK

Between now and 1985, durable goods manufacturing in Michigan is expected to recover and grow, although slowly. Tourism and the convention business will provide a major impetus to employment in the lodgings and restaurant industries especially. Banking, retail trade, legal services, and amusements also are slated for rapid growth. Northern Michigan can expect sizable gains in forest-based industries. Both agriculture and government, in contrast, will provide fewer jobs than they do now.

According to the latest projections by the Michigan Employment Security Commission, growth in the professional and technical occupations will be below average, a dramatic turnaround from previous trends.

> A major factor underlying this change is the reduced growth rate projected for government sector growth, particularly in education. Elementary and secondary school teachers comprise over 21 percent of professional and technical workers, and college and university teachers account for another three percent. While replacement needs will create numerous job openings, the elementary and secondary school teacher employment level is expected to decline, and the number of college and university teachers is not expected to grow. Since these two occupations represent such a large proportion of employment, their pessimistic outlook strongly influences the total professional and technical growth projection.[3]

Except for mining, engineers are not expected to enjoy above average growth in Michigan job opportunities. The ranks of physicians, chiropractors, veterinarians, therapists, and registered nurses will increase rapidly. Other high percentage growth white-collar occupations are entertainer, computer systems analyst, psychologist, sociologist, urban and regional planner, architect, archivist and curator, lawyer and judge, social worker, and personnel and labor and industrial relations worker.

According to the MESC report, the outlook for operatives and craft workers is slightly below average and that for managerial workers slightly above. Clerical and service occupations should be the most rapidly growing group.

The recently released *Michigan's Comprehensive Five-Year Full Employment Plan* included these remarks:

> Growth in the clerical group (the largest of all occupational categories) will be greatly affected by changes in technology: developments in communication devices, computers and word processors. Only those clerical workers such as secretaries and receptionists, whose jobs involve a high degree of personal contact will not be significantly affected.
>
> Although blue collar employment will lag behind growth in white collar occupations there are several notable exceptions. Jobs in the highly skilled construction trades will experience better than average blue collar employment growth due to expected expansion of housing and commercial construction during the 1982–1985 period. Greater technical sophistication in the stock of durable goods will increase the need for mechanics, with the most rapid gains expected for workers who can repair air conditioning and heating equipment, data processing machines, and office machines. Nontransport assemblers and inspector jobs (which account for more employment than any other blue collar group) also will do quite well, primarily due to the introduction

## TABLE 1
### Supply-Demand Situation of Various Occupations in Michigan: First Quarter 1980

**Shortage occupations**[a]

| | | | |
|---|---|---|---|
| Anesthesiologist | Grinder, s/u operator, internal | Nurse anesthetist | Research associate |
| Assistant professor | Gynecologist | Nurse supervisor | Rug repairer |
| Biologist | Hydraulic engineer | Orthotics assistant | Sales engineer |
| Boring jig machine s/u oper. | Industrial engineer | Pediatrician | Sales manager, forging |
| Chemist | Inspector, sports | Pharmacologist | Soil engineer |
| Civil engineer | Jeweler | Physician, general practice | Specialty cook, foreign food |
| Clinical psychologist | Licensed practical nurse | Physicist | Statistician |
| Diesel mechanic | Machinist | Production engineer | Statistician, applied |
| Director, res. & development | Maintenance mechanic | Programmer analyst | Stripper, black/white color |
| Export manager | Mechanical design engineer | Programmer, information system | Systems analyst, EDP |
| Exporter | Medical lab. technician | Project engineer | Translator |
| Faculty member | Metallurgist, extractive | Psychiatrist | |
| Fixture builder | Model maker | Registered nurse | |

**Occupations with favorable supply-demand relationship**[b]

| | | | |
|---|---|---|---|
| Appointment clerk | Cleaner II | Material handler* | Telephone solicitor* |
| Architect/engr./surveyor | Companion* | Mechanical engineer tech. | Tennis court attendant* |
| Bagger | Counter attend., cafeteria* | Occupations in math. | Typist |
| Billing & rate clerk | Drafter, mechanical | Sales agent, insurance* | Vending & door to door* |
| Bookkeeper II | Electrical engineer | Sales promotion | Unlicensed practical nurse* |
| Car hop* | Forest conservation | Stenographer | |
| Car wash attend., automobile* | Gardening & groundskeeping* | Structural engineer | |
| Caretaker* | Houseworker, general* | Survey workers | |

**Surplus occupations**[c]

| | | | |
|---|---|---|---|
| Aircraft mechanic & repairer | Electroplating | Marine mechanic & repairer | Resistance welder |
| Arc welder & cutter | Excavating, grading, paving | Meatcutter, exc. slaughter | Roofer |
| Assembler, automobile | Fabricating machine oper. | Medical asst. | Sales, home furn. |
| Assembler, internal comb. eng. | File, grind, buff, etc. | Melting | Salesperson, automobiles |
| Assembler, small parts | Finance, ins. & real estate mgmt. | Misc., construction | Sawing |
| Barber | | Misc., metal fab. | Sewing machine oper. mgmt. |
| Bartender | Finishing & coating | Mixing & blending | Sheet & bar rolling |
| Boilermaker | Forging | Nurses' aide | Sheet metal worker |
| Boring | Forming | Ore refine & fndry, NEC | Shipping & receiving clerk |
| Brazing, braze-weld, soldering | Fruit & nut farming | Paint, decorating and rel. | Stone, clay, glass proc. |
| Bricklayer | Gear machine | Painter, brush | Structural sheet worker |
| Cabinetmaker | General farming | Painter, spray | Stuffed furn. & mat., fab. & rep. |
| Carpenter | Hand sew, mend, embroider, etc. | Pharmacist | Teacher, elementary |
| Cashier | Heat treating | Pipefitter | Teacher, secondary school |
| Cement mason | Industrial-truck operator | Plasterer | Tire, tube, & rel., fab. & rep. |
| Concrete-mixing-truck driver | Laborer, general metal proc. | Plumber | Trailer-truck driver |
| Construction management | Landscape gardener | Police | Transp., comm., util. mgmt. |
| Cosmetologist | Lathe oper., production | Power-press tender | Transp. equip. painter |
| Dump-truck driver | Lawyer | Production clerk | Truck driver, heavy & light |
| Elect. appl. & fixture assem. & repair | Manager, food service | Production machine tender | Vegetable farming |
| | Manager, office | Punching & shearing | Welders, combination |
| Electric wire & cable fab. | Manager, sales | Purchasing agent | Wholesale & retail mgmt. |
| Electricians mechanic | Manufacturing management | Radio operator | Writer |

SOURCE: Michigan Employment Security Commission, *Quarterly Job Openings Report, 1st Quarter, 1980* (Detroit: 1980), pp. 13–15.

a. This group contains occupations in which the demand exceeded supply and actual shortages were known to exist. However, in some instances the number of jobseekers for a specific occupation may exceed the number of openings, and yet that occupation is still considered to be a shortage occupation. The job applicants may lack one or more of the employer requirements, such as education and experience. The following list of shortage occupations was based mainly on alien labor certifications and clearance job orders in addition to the applicants/job openings relationship for the first quarter of 1980.

b. This group of occupations was derived mainly from the job applicants and job orders listed with the MESC employment service offices only. As mentioned earlier, not all applicants or all job openings existing in the job market are listed with the employment service branch offices. Professional workers and unionized skilled labor depend to a large degree on services provided by their associations, unions, and private employment agencies.

In determining the occupations with favorable demand, the number of job openings, openings unfilled thirty days or more, and the ratio of applicants to job openings were used. Some occupations were unwanted by applicants although they enjoyed a favorable demand due to low wages, high turnover, limited or nonexisting fringe benefits, income based on commission, traveling, relocating requirements, and so forth. This type of occupation is marked with an asterisk (*).

c. The list of surplus occupations was extracted from the job applicants registered with MESC branch offices only. As noted before, not all jobseekers register with the MESC job services offices.

In determining the surplus occupations, the ratio of applicants to job openings, the absolute number of applicants, and the seasonality of the job market were taken into consideration.

of new durable goods product lines and greater industry emphasis on quality control.

The influence of Detroit's concentration in manufacturing is clearly evident as the area is expected to have at least 50 percent of the state's annual average job openings for mechanical engineers, tool and die makers, drafting aids and technicians, punch stamping press operators, fork lift operators, and assemblers. Jobs in the professional and technical groups are expected to grow much more rapidly in Detroit than in the state as a whole.

**TABLE 2**
**Fastest Growing Jobs and Jobs with Most Openings in the United States: 1978–1990**

| Fastest growing[a] | | Jobs with most openings[b] | |
|---|---|---|---|
| *Occupation* | *Number annually* | *Occupation* | *Number annually* |
| Bank clerks | 45,000 | Secretaries and stenographers | 305,000 |
| Bank officers and financial managers | 28,000 | Retail sales workers | 226,000 |
| Business machine repairers | 4,200 | Building custodians | 180,000 |
| City managers | 350 | Cashiers | 119,000 |
| Computer service technicians | 5,400 | Bookkeeping workers | 96,000 |
| Construction inspectors | 2,200 | Nursing aides, orderlies and attendants | 94,000 |
| Dental assistants | 11,000 | Cooks and chefs | 86,000 |
| Dental hygienists | 6,000 | Kindergarten and elementary teachers | 86,000 |
| Dining room attendants and dishwashers | 37,000 | Registered nurses | 85,000 |
| Flight attendants | 4,800 | Assemblers | 77,000 |
| | | Waiters and waitresses | 70,000 |
| Guards | 70,000 | Guards | 70,000 |
| Health service administrators | 18,000 | Blue-collar worker supervisors | 69,000 |
| Homemaker–home health aides | 36,000 | Local truck drivers | 64,000 |
| Industrial machinery repairers | 58,000 | Accountants | 61,000 |
| Landscape architects | 1,100 | Licensed practical nurses | 60,000 |
| | | Typists | 59,000 |
| Licensed practical nurses | 60,000 | Carpenters | 58,000 |
| Lithographers | 2,300 | Industrial machinery repairers | 58,000 |
| Nursing aides, orderlies, and attendants | 94,000 | Real estate agents and brokers | 50,000 |
| Occupational therapists | 2,500 | Construction laborers | 49,000 |
| | | Engineers | 46,500 |
| Occupational therapy assistants | 1,100 | Bank clerks | 45,000 |
| Physical therapists | 2,700 | Private household workers | 45,000 |
| Podiatrists | 600 | | |
| Respiratory therapy workers | 5,000 | Receptionists | 41,000 |
| Speech pathologists and audiologists | 3,900 | Wholesale trade sales workers | 40,000 |
| Teacher aides | 26,000 | | |
| Travel agents | 1,900 | | |

SOURCE: Bureau of Labor Stattistics, *Occupational Outlook Quarterly* 24 (Spring 1980), 4.
a. Occupations with growth projections of 50 percent or more.
b. Replacement needs and growth are projected to cause these occupations to offer the largest number of openings.

Other exceptional growth opportunities are expected in occupations in the non-manufacturing and service industries. The overall thrust of non-manufacturing and service growth is expected to produce approximately twice as many annual average job openings in white collar occupations than comparable openings in blue collar occupations.[4]

Everything considered, until the mid-1980s, Michigan youth can anticipate relatively plentiful opportunities after high school or after having earned an associate degree or received technical training at a community college. For those getting four-year and advanced degrees, demand here will match supply for some but not all specialties. Michigan can expect to continue to export some of its most expensive human capital, perhaps as much as 20 percent of new college graduates.

After 1985, the outlook for all youth in this state might be less promising. According to the latest *Michigan Statistical Abstract*, total job growth in Michigan is projected at 5 percent between 1985 and 1990, that is, about one percent annually.[5] This is a baseline forecast; it more or less presupposes business as usual. It is unlikely to materialize because the state probably will devise a development strategy to create new kinds of industries and jobs. For example, a government-industry authority to manage and conduct research on hazardous industrial waste might have the potential for creating 10,000 to 15,000 jobs, at various skill levels. What now seems a monumental problem could become a golden opportunity; to create centers for the storage of chemical, radioactive, and other dangerous by-products of our hospitals, factories, and universities while our industrial and university scientists learn to deal with them more effectively. Michigan, or any other state, could become the center for solid waste management and detoxification for the whole industrial heartland. There are other possibilities for creating jobs to solve problems as well as to meet the demand for new products. In short, there will be industries and occupations in this state in 1990 that cannot be foreseen now. But it seems unlikely that they will be plentiful enough to stem the tide of people, particularly college graduates, leaving for greener pastures.

Table 2 has been excerpted from a recent Bureau of Labor Statistics job projection for 1990 for the United States as a whole. Clearly, in the United States, as in Michigan, the fastest growing categories are service, clerical, and sales workers and not those occupations for which a college degree is required.

## NOTES

1. Bureau of the Census, *Current Population Reports* (Washington, D. C.: irregularly), Series P-20, No. 201 (May 1970), pp. 4, 5.
2. Bureau of the Census, *Current Population Reports* (Washington, D. C.: irregularly), Series P-20, No. 353 (August 1980), p. 41.
3. Michigan Employment Security Commission, *Occupational Outlook 1985* (Detroit: January 1980), p. 3.
4. Michigan Department of Labor, Bureau of Employment and Training, *Michigan's Comprehensive Five-Year Full Employment Plan (1981–1985)* (Lansing: July 1980), pp. 30, 31.
5. Division of Research, Graduate School of Business Administration, Michigan State University, *Michigan Statistical Abstract*, 15th ed. (East Lansing: September 1980), p. 969.

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